

Appendix I: GHG Worksheet

Bent Tree North Wind Farm	From SPA- Section 8.1.4.1 Employment Impacts, 8.13.1 Workforce, Section 8.6.1.1 Potential Impacts	Traffic during construction of the solar facility is estimated to average 100-150 pickup trucks, cars, and/or other types of employee vehicles and approximately 30-35 semi-trucks per day for component delivery onsite for the 8-9 month duration of construction. Approximately 30-35 semi-trucks per day will be used for delivery of facility components. Semi-truck delivery will vary per day depending on time of construction and delivery timeline of equipment.
Freeborn, Waseca, and Steele Counties, MN	From SPA - Section 8.1.4.1 Employment Impacts, 8.13.1 Workforce	Typical onsite construction staff levels will depend on the number of concurrent tasks being performed and the phasing of the Project. The Project will create approximately 150 jobs during the peak construction and installation phases, and up to 3 full time jobs during the operations phase.
10/30/2024		After construction is complete, traffic impacts during the operational phase of the Project are expected to be negligible. A small maintenance crew driving through the area in light duty trucks on a regular basis will monitor and maintain the facilities as needed; traffic function in the Project Area will not be impacted as a result

Equipment Fuel Consumption Estimate

Phase	Equipment Type	No. of Equipment	Days	Duration (hours/day)	Fuel Consumption (gal/hour)	Fuel Type	Est. Total Gallons	Notes/Assumptions
Construction	Bulldozer	14	70	8	7.6	Diesel	59,584	Caterpillar D6T Medium Load
Construction	Grader/scrapper	2	70	8	5.6	Diesel	6,272	Caterpillar 140M3 Medium Load
Construction	Backhoe	1	70	8	3.1	Diesel	1,736	Caterpillar 420F Low Load
Construction	Roller	4	94	8	6.6	Diesel	19,853	CAT 84" (2), CAT C556B, CAT CB24
Construction	Excavator	6	94	8	8.1	Diesel	36,547	Caterpillar 336D Medium Load
Construction	Wheel Loader	1	70	8	4	Diesel	2,244	CAT 950M
Construction	Skid steer	8	94	8	3.3	Diesel	19,853	Caterpillar 289D Medium Load
Construction	Fork lift (all terrain)	12	117	8	2.9	Diesel	32,573	JLG 12K (3), JCB 512-56 (2), JCB 12K VR (6), CAT 12K VR
Construction	Tractors	2	117	8	7	Diesel	13,104	Ford 4600 AG & International 9200I
Construction	Track Manlift	2	70	8	2.6	Diesel	2,912	GENIE S-60 TraX MANLIFT
Construction	Track Boom	2	70	8	2.6	Diesel	2,912	GENIE S-65 TraX BOOM
Construction	Track Loader	4	70	8	5.33	Diesel	11,939	CAT 963K TRACK LOADER W/ FORKS & BKT
Construction	Wheel Loader	2	70	8	4.4	Diesel	4,928	CAT 950K WHEEL LOADER W/BKT & FORKS
Construction	Dump Truck	14	53	8	10	Diesel	58,904	Tandem Axle 10-14 CY
Construction	Concrete truck and boom	100	18	8	12	Diesel	168,000	Primarily Foundations, also substation
Construction	Semi truck/trailer	5	98	8	10	Diesel	39,200	Standard size and weight semitruck for equipment deliveries
Construction	Light Duty Crane	5	70	8	12.6	Diesel	35,280	LINK-BELT LS-238 HSL CRAWLER CRANE
Construction	Medium Duty Crane	5	70	8	12.6	Diesel	35,280	LINK-BELT LS 248 200 TON CRAWLER CRANE
Construction	Heavy duty crane	5	70	8	5.4	Diesel	15,120	LINK-BELT 348 HYLAB 5 LATTICE BOOM CRAWLER CRANE
Construction	Watering truck	2	117	8	4.3	Diesel	8,050	BAS VOLVO FMX WATER TANK TRUCK
Construction	Generator	10	117	8	1	Gasoline	9,360	CAT XQ30KW
Construction	Light-duty pickup truck (on-site)	37	130	6	3.6	Gasoline	103,896	
Construction	Construction contractor vehicles (commute to/from site)	100	187	1.3	2.5	Gasoline	62,333	Assume bulk of the workforce lives in Mankato, MN and drive to the site. Workers in Mankato are about 40 minutes one way, 80 min round trip. Assume 50% carpool.
	TOTAL GALLONS GAS (per year)						175,589	
	TOTAL GALLONS DIESEL (per year)						574,290	
Phase	Equipment Type	No. of Equipment	Days/Year	Duration (hours/day)	Fuel Consumption (gal/hour)	Fuel Type	Est. Total Gallons	Notes/Assumptions
Operation	Light-duty pickup truck (commute to/from site) - 2 full time staff	2	228	2	2.5	Gasoline	2,279	2 AE Wind Techs, each with a truck
Operation	O&M contractor vehicles (commute to/from site)	1	50	1.0	2.5	Gasoline	125	1 Off site Manager visiting site once per week
Operation	O&M contractor vehicles (on-site)	2	100	1	2.5	Gasoline	500	2-4 Service Techs at 1.25 days average per service / 2 trucks
	TOTAL GALLONS GAS (per year)						2,904	
	TOTAL GALLONS DIESEL (per year)						-	

Summary						
Construction	Annual Gallons	KG of CO2 per Gallon Diesel	KG of CO2 per Gallon Gas	Total KG	KG to Tons Conversion Factor	Total Tons
Total Gas	175,589		8.78	1,541,674	0.00110231	1699.4
Total Diesel	574,290	10.18		5,846,273	0.00110231	6444.4
				7,387,947		8143.8
Operation						
Total Gas	2,904		8.78	25,497	0.00110231	28.1
Total Diesel	-	10.18		0	0.00110231	0.0
						28.1